Quick Reference On Liver Tests

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| Plt | Indicator of portal hypertension. When under 100,000 almost always means cirrhosis unless there is some other cause. “Poor mans’ liver biopsy” |
| AFP | Tumor marker, inaccurate, may be elevated secondary to inflammation, recent illness, may not be elevated even when hepatocellular carcinoma is present.  |
| Pt/INR | Marker of synthetic capacity of liver. |
| Albumin | The liver produces protein. When this level is low we know the liver is not functioning at its’ normal synthetic capacity.  |
| ALP | When Alp is the most elevated of the liver enzymes this is called a cholestatic pattern and indicates obstruction in the bile ducts. Look for obstruction in the large or small bile ducts from strictures, stones, tumors or think PBC, PSC.  |
| ALT | Marker of liver damage not function. Highest concentration in the liver. Normal range female 20, male 30.  | When Alt and Ast are acutely elevated take a good history. Is there toxic ingestion or exposure, alcohol or medications: typical culprits are sulfa, erythromycin and Tylenol. Also consider infection with anything, even mild infections can cause elevation of enzyme elevation, remember the liver is filtering out all the toxins in the body. Also think of rhabdomyolysis associated with statins or over exercise/dehydration syndrome. Remember MI and cancer can cause ALT and AST to elevate. You will see the most marked elevations in ischemic hepatitis and autoimmune hepatitis. Repeat your initial test in a reasonable amount of time to document resolution or worsening enzymes. You can run an acute hepatitis panel with this if you think there is risk and add other labs as your history has elicited.  |
| AST | Marker of liver damage not function. Also found in other tissues, cardiac, skeletal muscle, kidney, brain, pancreas, WBC, RBC. |
| Total Bilirubin | Total of direct and indirect bilirubin. Not a sensitive indicator of hepatic dysfunction. Bilirubin is a byproduct of RBC catabolism. Bilirubin is conjugated in the liver. Bilirubin is affected by overproduction from hemolysis, impaired uptake, impaired conjugation, excretion or leakage from damaged hepatocytes or bile ducts as in obstruction. Bilirubin tests the ability of the liver to transport and clear endogenous substances from the body.  |
| Unconjugated (Indirect) Bilirubin | Increased by overproduction of bilirubin as seen in hemolysis or impaired uptake by drugs or Gilbert Syndrome.  |
| Conjugated (direct) bilirubin | Increased by damaged hepatocytes or bile ducts, decreased excretion. More sensitive test for hepatic dysfunction. With associated Alk Phos elevation think bile duct obstruction. With elevated transaminases think hepatocellular injury.  |
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| Hep A Ab total | Combo of IgG and IgM tells you about long term immunity, should reflex to IgM if positive but doesn’t in our lab. IgM tells you about ImMediate infection |  |
| Hep B core Ab total | Tells you natural exposure to Hep B, IgG and IgM combination test. You can usually tell from sAg and Ab if IgM is positive (current infection) in most cases.  |
| Hep B sAg | If positive you have an active case of Hepatitis B |
| Hep B sAb | If positive you have immunity to Hep B from vaccine or exposure.  |
| Hep C Ab | If positive you have been exposed to Hep C but are not necessarily infected. People who have been treated, and cured, will continue to have a positive antibody. Remember an antibody is what your body makes to fight an infection; it is your body’s memory of the infection, the army that is searching to destroy it.  |
| Hep C GT | Identifies the different “strains” of Hepatitis C, 1-6. Is necessary to determine what type of treatment can be used and for how long. It does not usually change, but you can get cured then acquire a different genotype. 1a is the most common in the US. Genotype 3 is most resistant to treatment right now.  |
| Hep C RNA | Counts the viral load. Over 6 million is considered high in terms of treatment. However, the level of the virus is insignificant in terms of how much it is damaging the liver. 18 million is not damaging the liver any more than 1million and in fact a higher viral load may mean there is more healthy liver tissue in which Hep C is replicating.  |
| Fibrosure | A blood test that can estimate the amount of scaring in the liver but is currently only approved to be used in patients with liver disease.  |
| IL28B | Genetic tests for susceptibility to interferon resistance.  |
| Q80K | Genetic test for resistance to protease inhibitors.  |
| ANA | Non-specific for inflammatory diseases such as lupus, autoimmune hepatitis and rheumatoid arthritis.  |
| AMA (antimitochondrial antibody do not confuse with antimicorsomial antibody for thyroid disorders) | Test for primary biliary cirrhosis typically an inherited disorder and usually presents with a marked elevated alk. Phosphatase |
| ASMA (anti smooth muscle antibody or F-actin) | One of the Subsequent test for autoimmune hepatitis which is typically an inherited disorder and usually characterized by significantly elevated Alt and Ast |
| Ceruloplasmin | Marker for Wilsons disease which is a copper overload runs in families, Kayser-Fleischer rings in the eyes |
| A1AT ( alpha-1 anti-trypsin) | Deficiency in this enzyme is typically related to pulmonary disease but can have hepatic manifestations as well.  |
| TTGA (Tissue transglutaminase antibody) | Celiac disease testing. While celiac disease typically presents as an abdominal, diarrheal disease and is most predominant in the northern European descendants, there are hepatic complications as well.  |
| Total IgA | You have to run a total IgA with the TTGA as 25% of the population is deficient in IgA and the test is inaccurate in this deficient population.  |
| HIV | You need to know if your Hep C Patient is Co-infected |
| Ferritin | Is an acute phase reactant and may be elevated in persons with chronic Hep C just from the disease process.  |
| Cryoglobulins | A precipitate in the blood caused by Hepatitis C that can cause joint pain and renal damage. It can be cured by curing hepatitis C.  |
| Liver Biopsy | Widely unnecessary. There are other non-invasive methods of estimating liver fibrosis, Fibrosure (Blood), Fibrospect (USS-currently unavailable here), APRI score. Very rarely will we order liver biopsy anymore.  |  |
| Unless there are other contraindications Hep C patients are all eligible to have:Hep AHep BHPVFluMMRPPSV23PPSV13TdapVarivaxZostavax |  |  |